

IN THE CLAIMS

This listing of claims replaces all prior versions, and listings, in this application.

1. (currently amended) Method for increasing the efficiency of targeted integration of a polynucleotide to a pre-determined site into the genome of a filamentous fungal cell with a preference for non-homologous recombination (NHR), wherein said polynucleotide has a region of homology with said pre-determined site, comprising steering an integration pathway towards homologous recombination (HR).
2. (original) The method of claim 1, wherein the steering comprises providing a mutant of a parent filamentous fungal cell, wherein the ratio of NHR/HR is decreased in the mutant as compared to said ratio in said parent organism measured under the same conditions.
3. (previously presented) The method of claim 1, wherein the steering comprises providing a mutant which is deficient in a gene encoding a component involved in NHR, and/or has a decreased level of a component involved in NHR.
4. (original) The method of claim 3, wherein the mutant is, preferably inducibly, deficient in at least one of the following genes: *hdfA* or homologues thereof, *hdfB* or homologues thereof, or both, and/or has, preferably inducibly, a decreased amount of at least one of the proteins encoded by these genes.
5. (previously presented) The method of claim 3, wherein a gene involved in NHR has been replaced by a non-functional variant.
6. (previously presented) The method according to claim 1, wherein the steering comprises adding an excess of small double stranded polynucleotides to the polynucleotide to be integrated.

7. (previously presented) The method according to claim 1, wherein the steering comprises decreasing the activity of at least one protein active in the NHR by adding an inhibitor of said protein(s).
8. (previously presented) The method according to claim 1, wherein the mutant has an increased level of a component involved in HR.
9. (previously presented) The method according to claim 1, wherein a filamentous fungal which has a ratio NHR/HR less than 50, preferably less than 10, even more preferably less than 1, and most preferably less than 0.001 is used.
10. (currently amended) A mutant of a parent filamentous fungal cell, the parent organism having a preference for non-homologous recombination (NHR), wherein the ratio of NHR/HR is decreased in the mutant as compared to said ratio in said parent organism measured under the same conditions.
11. (original) The mutant according to claim 10, wherein the mutant is deficient in a gene encoding a component involved in NHR, and/or has a decreased level of a component involved in NHR.
12. (previously presented) The mutant according to claim 10, wherein the mutant is, preferably inducibly, deficient in at least one of the following genes: *hdfA* or homologues thereof, *hdfB* or homologues thereof, or both, and/or has, preferably inducibly, a decreased amount of at least one of the proteins encoded by these genes.
13. (previously presented) The mutant according to claim 10, wherein in the genome of the organism a gene involved in NHR has been replaced by a non-functional variant.
14. (previously presented) The mutant according to claim 10, wherein the mutant has an increased level of a component involved in HR.

15. (previously presented) The mutant according to claim 10, wherein the mutant is a recombinant mutant.

16. (original) A filamentous fungal which has a ratio NHR/HR less than 50, preferably less than 10, even more preferably less than 1, and most preferably less than 0.001.

17. (previously presented) The filamentous fungus according to claim 10 transformed with a DNA construct comprising a DNA sequence comprising a gene of interest encoding a polypeptide of interest.

18. (previously presented) The filamentous fungus according to claim 10, wherein the filamentous fungus is an *Aspergillus*, *Penicillium* or *Trichoderma* species.

19. (original) The filamentous fungus according to claim 18, wherein the *Aspergillus* is an *Aspergillus niger* or an *Aspergillus oryzae* species.

20. (original) The filamentous fungus according to claim 18, wherein the *Penicillium* is a *Penicillium chrysogenum* or *Penicillium citrinum* species.

21. (previously presented) Method for producing a polypeptide of interest, wherein the filamentous fungus of claim 10 is used.

22. (previously presented) Method for producing a metabolite, wherein the filamentous fungus of claim 10 is used.

23. (original) Method according to claim 22, wherein the metabolite is a carotenoid compound or a beta-lactam compound.

24. (original) Isolated DNA sequences having SEQ ID NO: 2 or 5 or 19 or 22 or homologues thereof.

25. (original) Isolated polypeptides encoded by the DNA sequences of claim 24 or homologues thereof.